

## EXPLANATION OF PLATES XIII. &amp; XIV.

The figures, except those of the antennæ, give an enlarged view of the head and anterior margin of the prothorax, from above, the head in some cases being also shown from in front (figs. 11 *a*, 15 *a*) or in profile (figs. 19 *a*, 33 *a*). They are all diagrammatic, it being impossible to indicate the complicated structure in one figure. The antennæ are shown from above, 16 *a* from beneath. The explanation of the figures of the species illustrated on the two Plates is given under each insect in the text. All are taken from ♂♂.

XLIX.—*On the Discovery of the missing Type Specimen of the Ascidian Oculinaria australis, Gray.* By R. KIRKPATRICK.

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THE type—and, until 1918, the only known specimen—of *Oculinaria australis*, Gray, has been missing for over fifty years. The unique specimen, preserved in spirit, was presented to the British Museum (Nat. Hist.) by Dr. Bowerbank, and was described by Gray in 1868 (P. Z. S. 1868, p. 564), a text-figure of only a portion being given. Gray's description is as follows:—"The mass is cylindrical, about 8 inches long and 1½ inch in diameter in spirits. It is white, with ends rather tapering and rounded. It entirely consists of a large number of more or less oblong cysts, placed closely side by side on every side of an imaginary central axis, the cysts covering the ends of the mass like the rest of the body. The cysts are hard, cartilaginous, rather convex externally, with two concavities having an opening at the base of each. . . . The outer surface of the cyst is covered with a thick hard skin, strengthened externally with embedded particles of sand. . . ."

Nothing more was heard of *Oculinaria* till 1886, when Herdman\* placed the genus in his family Polystyelidæ; but, when examining the Tunicata in the British Museum, he was unable to see the type of *O. australis*, because it could not be found.

Later, Michaelsen and Hartmeyer had wished to see this specimen in order to gain some knowledge of the affinities of the genus; but they, also, were disappointed. Gray's diagnosis was wholly based on external characters, and no

\* 'Challenger' Tunicata, part ii. p. 323.

clue whatever had been given concerning the essential features.

In 1905, during the Hamburg South-west Australian Expedition, Hartmeyer and Michaelsen collected near Fremantle a number of specimens which appeared to have all the characters of *Oculinaria australis*. The specimens had been cast ashore after a storm, and evidently had been torn up from the sea-bottom. A curious fact now became revealed, viz., that elongated digitiform examples possessed not an imaginary axis, but a solid one formed by a filament of alga.

In 1918 Hartmeyer published a short preliminary account of the Ascidian\*, giving a description of the internal anatomy.

The genus has certain unique characters, which readily distinguish it from all the other members of the subfamily Polyzoinæ—for *Oculinaria* alone has four folds in the branchial sac, all the rest of the genera of Polyzoinæ having less than four. Further, the gonads are on one side only, viz., on the right side.

To return to the missing type-specimen. When, in 1895, the writer was entrusted by Mr. E. A. Smith with the charge of the British Museum collection of Tunicata, he made a manuscript catalogue. A prolonged but futile search was made for the type-specimen of *Oculinaria australis*, firstly among the Tunicata and less thoroughly among the Anthozoa.

Recently Mr. A. K. Totton has had a preliminary card-index made of the Anthozoa, and the writer asked him if by any chance the name *Oculinaria* had been entered. Happily the name was found, and presently the long-lost type was produced. Probably the specimen had been misplaced at the time of the removal of the Natural History collections from Bloomsbury to South Kensington in 1880. It was not surprising the writer had overlooked the specimen in 1895. Not only had it been placed amongst an alien group in a high dark cupboard, but the original description was incorrect and misleading—probably owing to a printer's error. For Gray records the diameter as  $1\frac{1}{3}$  inch (33 mm.), but the correct figure should be less than  $\frac{1}{2}$  inch (12 mm.). Hartmeyer had already arrived at the conclusion that a mistake had been made here. The length is 8 inches, but the slender specimen had been doubled up and pressed into a small bottle less than

\* "Eine wiedergefundene Ascidie," SB. Ges. naturf. Berlin, 1918, no. 10, p. 385.

an inch in diameter and only 6 inches high. The writer was looking for a tough stout specimen 8 inches high and  $1\frac{1}{3}$  inch thick.

Gray had not noticed that at one of the tapering and rounded ends there was a contracted opening with well-defined margins that could easily be stretched several millimetres.

The writer failed to find the axial stem of sea-weed; but there can hardly be any doubt that it has existed, and possibly it still exists, but there is no need to mutilate the specimen to find it.

A dissection of one of the polyps showed four folds in the branchial sac, and gonads only on the right side of the body. (The writer only found two gonads, but one may have been lost in removing the ascidiozoid from the very tough test.) Accordingly, Hartmeyer's identification of his specimens collected near Fremantle is fully confirmed by comparison with the recovered type.

L.—On the Anatomy of some new Species of *Drawida*.  
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Bangalore.

[Plates XV.—XVIII.]

THE adult anatomy of this genus of Oligochaete worms is now fairly well established, especially by the investigations of authors like Beddard, Benham, Bourne, Michaelsen, Perrier, Rosa, and Stephenson. The present communication deals with certain glands associated with the reproductive apparatus of some new species of *Drawida* not hitherto recorded so far as I am aware. The material at my disposal has been a large collection of well-preserved worms collected towards the middle of 1918 in the rain-forests of Coorg, at elevations ranging from 2500 feet to 4000 feet. I do not propose to add any remarks on the known species contained in my collection, but will select for discussion the forms hitherto undescribed. I have received from Dr. Stephenson and Dr. Michaelsen, copies of their excellent papers relating chiefly to those forms occurring in Ceylon and the Indian Empire, and my thanks are due to them and also to Dr. N. Annandale, who courteously permitted me in June 1919 to examine the named collection of the Oligochaete worms belonging to the Zoological Survey of India.